



## Complete Summary

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### TITLE

Anesthesiology and critical care: percentage of patients who undergo central venous catheter (CVC) insertion for whom CVC was inserted with all elements of maximal sterile barrier technique followed.

### SOURCE(S)

American Society of Anesthesiologists, Physician Consortium for Performance Improvement®. Anesthesiology and critical care physician performance measurement set. Chicago (IL): American Medical Association; 2007 Oct. 21 p. [5 references]

## Measure Domain

### PRIMARY MEASURE DOMAIN

Process

The validity of measures depends on how they are built. By examining the key building blocks of a measure, you can assess its validity for your purpose. For more information, visit the [Measure Validity](#) page.

### SECONDARY MEASURE DOMAIN

Does not apply to this measure

## Brief Abstract

### DESCRIPTION

This measure is used to assess the percentage of patients who undergo central venous catheter (CVC) insertion for whom CVC was inserted with all elements of maximal sterile barrier technique (cap AND mask AND sterile gown AND sterile gloves AND a large sterile sheet AND hand hygiene AND 2% chlorhexidine for cutaneous antisepsis [or acceptable alternative antiseptics, per current guidelines]) followed.

### RATIONALE

Catheter-related bloodstream infection is a costly complication of central venous catheter (CVC) insertion, but may be avoided with routine use of aseptic

technique during catheter insertion. This measure is constructed to require that all of the listed elements of aseptic technique are followed and documented\*.

\*The following clinical recommendation statements are quoted verbatim from the referenced clinical guidelines and represent the evidence base for the measure:

Maximal sterile barrier precautions during catheter insertion: Use aseptic technique including the use of a cap, mask, sterile gown, sterile gloves, and a large sterile sheet, for the insertion of CVCs (including peripherally inserted central venous catheters [PICC]) or guidewire exchange. (Centers for Disease Control and Prevention/Morbidity and Mortality Weekly Report [CDC/MMWR])

Hand hygiene: Observe proper hand-hygiene procedures either by washing hands with conventional antiseptic-containing soap and water or with waterless alcohol-based gels or foams. Observe hand hygiene before and after palpating catheter insertion sites, as well as before and after inserting, replacing, accessing, repairing, or dressing an intravascular catheter. Palpation of the insertion site should not be performed after the application of antiseptic, unless aseptic technique is maintained. Use of gloves does not obviate the need for hand hygiene. (CDC/MMWR)

Cutaneous antisepsis: Disinfect clean skin with an appropriate antiseptic before catheter insertion and during dressing changes. Although a 2% chlorhexidine-based preparation is preferred, tincture of iodine, an iodophor, or 70% alcohol can be used. (CDC/MMWR)

## **PRIMARY CLINICAL COMPONENT**

Catheter-related bloodstream infections; central venous catheter (CVC) insertion protocol; maximum sterile barrier technique (cap, mask, sterile gown, sterile gloves, a large sterile sheet, hand hygiene, 2% chlorhexidine for cutaneous antisepsis)

## **DENOMINATOR DESCRIPTION**

All patients who undergo central venous catheter (CVC) insertion (see the related "Denominator Inclusions/Exclusions" field in the Complete Summary)

## **NUMERATOR DESCRIPTION**

Patients for whom central venous catheter (CVC) was inserted with all elements of maximal sterile barrier technique (cap AND mask AND sterile gown AND sterile gloves AND a large sterile sheet AND hand hygiene AND 2% chlorhexidine for cutaneous antisepsis [or acceptable alternative antiseptics, per current guidelines]) followed

## **Evidence Supporting the Measure**

### **EVIDENCE SUPPORTING THE CRITERION OF QUALITY**

- A clinical practice guideline or other peer-reviewed synthesis of the clinical evidence

## **Evidence Supporting Need for the Measure**

### **NEED FOR THE MEASURE**

Unspecified

### State of Use of the Measure

#### **STATE OF USE**

Current routine use

#### **CURRENT USE**

Internal quality improvement  
National reporting

### Application of Measure in its Current Use

#### **CARE SETTING**

Hospitals

#### **PROFESSIONALS RESPONSIBLE FOR HEALTH CARE**

Physicians

#### **LOWEST LEVEL OF HEALTH CARE DELIVERY ADDRESSED**

Individual Clinicians

#### **TARGET POPULATION AGE**

Age greater than or equal to 18 years

#### **TARGET POPULATION GENDER**

Either male or female

#### **STRATIFICATION BY VULNERABLE POPULATIONS**

Unspecified

### Characteristics of the Primary Clinical Component

#### **INCIDENCE/PREVALENCE**

Unspecified

#### **ASSOCIATION WITH VULNERABLE POPULATIONS**

Unspecified

**BURDEN OF ILLNESS**

Unspecified

**UTILIZATION**

Unspecified

**COSTS**

Unspecified

**Institute of Medicine National Healthcare Quality Report Categories****IOM CARE NEED**

Getting Better

**IOM DOMAIN**

Effectiveness  
Safety

**Data Collection for the Measure****CASE FINDING**

Users of care only

**DESCRIPTION OF CASE FINDING**

All patients who undergo central venous catheter (CVC) insertion

**DENOMINATOR SAMPLING FRAME**

Patients associated with provider

**DENOMINATOR INCLUSIONS/EXCLUSIONS****Inclusions**

All patients who undergo central venous catheter (CVC) insertion

**Exclusions**

Documentation of medical reasons(s) for not following all elements of maximal sterile barrier technique during CVC insertion (including increased risk of harm to patient if adherence to aseptic technique would cause delay in CVC insertion)

**RELATIONSHIP OF DENOMINATOR TO NUMERATOR**

All cases in the denominator are equally eligible to appear in the numerator

#### **DENOMINATOR (INDEX) EVENT**

Therapeutic Intervention

#### **DENOMINATOR TIME WINDOW**

Time window is a single point in time

#### **NUMERATOR INCLUSIONS/EXCLUSIONS**

##### **Inclusions**

Patients for whom central venous catheter (CVC) was inserted with all elements of maximal sterile barrier technique (cap AND mask AND sterile gown AND sterile gloves AND a large sterile sheet AND hand hygiene AND 2% chlorhexidine for cutaneous antisepsis [or acceptable alternative antiseptics, per current guidelines]) followed

##### **Exclusions**

None

#### **MEASURE RESULTS UNDER CONTROL OF HEALTH CARE PROFESSIONALS, ORGANIZATIONS AND/OR POLICYMAKERS**

The measure results are somewhat or substantially under the control of the health care professionals, organizations and/or policymakers to whom the measure applies.

#### **NUMERATOR TIME WINDOW**

Encounter or point in time

#### **DATA SOURCE**

Administrative data  
Medical record

#### **LEVEL OF DETERMINATION OF QUALITY**

Individual Case

#### **PRE-EXISTING INSTRUMENT USED**

Unspecified

#### **Computation of the Measure**

#### **SCORING**

Rate

### **INTERPRETATION OF SCORE**

Better quality is associated with a higher score

### **ALLOWANCE FOR PATIENT FACTORS**

Unspecified

### **STANDARD OF COMPARISON**

Internal time comparison

## **Evaluation of Measure Properties**

### **EXTENT OF MEASURE TESTING**

Unspecified

## **Identifying Information**

### **ORIGINAL TITLE**

Measure #2: prevention of catheter-related bloodstream infections (CRBSI) - central venous catheter (CVC) insertion protocol.

### **MEASURE COLLECTION**

[The Physician Consortium for Performance Improvement® Measurement Sets](#)

### **MEASURE SET NAME**

[Anesthesiology and Critical Care Physician Performance Measurement Set](#)

### **SUBMITTER**

American Medical Association on behalf of the American Society of Anesthesiologists and the Physician Consortium for Performance Improvement®

### **DEVELOPER**

American Society of Anesthesiologists  
Physician Consortium for Performance Improvement®

### **FUNDING SOURCE(S)**

Unspecified

## **COMPOSITION OF THE GROUP THAT DEVELOPED THE MEASURE**

Alex A. Hannenberg, MD (*Co-Chair*); Jinnet Fowles, PhD (*Co-Chair*); Neal Cohen, MD, MPH, MS; Richard T. Connis, PhD; Todd Dorman, MD; Thomas Esposito, MD, MPH, FACS; Ronald A. Gabel, MD; Michael Heisler, MD, MPH; Cynthia P. Helstad, PhD, RN; Daniel L. Herr, MS, MD, FCCM; Kay Jewell, MD, ABHM; Gerald A. Maccioli MD, FCCM; David G. Nickinovich, PhD; Mark D. Morasch, MD; William P. Schechter, MD FACS; Daniel Sessler, MD; Lisa J. Thiemann, CRNA, MNA; Patrick E. Voight, RN, BSN, MSA, CNOR

Karin Bierstein, JD, MPH, American Society of Anesthesiologists

Mark Antman, DDS, MBA, American Medical Association; Joseph Y. Gave, MPH, American Medical Association; Kendra Hanley, MS, CHE, American Medical Association; Karen S. Kmetik, PhD, American Medical Association

Rebecca A. Kresowik, Facilitator; Timothy F. Kresowik, MD, Facilitator

Phil Renner, MBA, National Committee for Quality Assurance

Lisa Buczkowski, RN, MS, Joint Commission on Accreditation of Healthcare Organizations; Elvira Ryan, RN, Joint Commission on Accreditation of Healthcare Organizations

## **FINANCIAL DISCLOSURES/OTHER POTENTIAL CONFLICTS OF INTEREST**

Conflicts, if any, are disclosed in accordance with the Physician Consortium for Performance Improvement® conflict of interest policy.

## **INCLUDED IN**

Ambulatory Care Quality Alliance  
Physician Quality Reporting Initiative

## **ADAPTATION**

Measure was not adapted from another source.

## **RELEASE DATE**

2007 Jun

## **REVISION DATE**

2007 Oct

## **MEASURE STATUS**

This is the current release of the measure.

## **SOURCE(S)**

American Society of Anesthesiologists, Physician Consortium for Performance Improvement®. Anesthesiology and critical care physician performance measurement set. Chicago (IL): American Medical Association; 2007 Oct. 21 p. [5 references]

## **MEASURE AVAILABILITY**

The individual measure, "Measure #2: Prevention of Catheter-related Bloodstream Infections (CRBSI) - Central Venous Catheter (CVC) Insertion Protocol," is published in the "Anesthesiology and Critical Care Physician Performance Measurement Set." This document and technical specifications are available in Portable Document Format (PDF) from the American Medical Association (AMA)-convened Physician Consortium for Performance Improvement® Web site: [www.physicianconsortium.org](http://www.physicianconsortium.org).

For further information, please contact AMA staff by e-mail at [cqi@ama-assn.org](mailto:cqi@ama-assn.org).

## **NQMC STATUS**

This NQMC summary was completed by ECRI Institute on January 2, 2008. The information was verified by the measure developer on January 11, 2008.

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